

# Analysis of Deterrence

CDR (s) Harrison Schramm  
Naval Postgraduate School

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE <b>JAN 2011</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-2011 to 00-00-2011</b>	
4. TITLE AND SUBTITLE <b>Analysis of Deterrence</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>Naval Postgraduate School, Monterey, CA, 93943</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES <b>2011 Force Structure Workshop, TASC Heritage Conference Center, Chantilly, VA, 24-27 January 2011</b>					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>Same as Report (SAR)</b>	18. NUMBER OF PAGES <b>19</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			



# Agenda

- What is deterrence?
- A review of Analytic Methods
- Case Studies
- Implications and prospects for deterrence



# Motivation



“(I want) to take the lessons of the past in nuclear deterrence and apply them moving forward” – ADM Mike Mullen

“the instruments of war do have a role to play in preserving the peace. And yet this truth must coexist with another - that no matter how justified, war promises human tragedy.”

-- President Obama's Nobel Peace speech





# Deterrence:

## Is..

- A **coercive** strategy which aims to *maintain the status quo* by forcing an adversary to re-consider the costs and benefits of their actions
- Requires:
  - The ability to inflict harm to something the adversary values
  - The Will to inflict this harm
  - **Effective communication** of the ability and will
- Can sum these up in one word: **CREDIBILITY**

## Is challenging to study because...

- We only gain partial information about effectiveness.
  - When we (or others are attacked) we can conclude that our deterrence was insufficient
  - When attacks do not happen, it *may* be because of our deterrent, or another effect.
- We never truly know the motivations / utilities of our adversaries.
  - Their private utilities are probably 'unknowable'

No one wants to be in the position of finding a problem both important for study and without good analytic methods to tackle it. - Jervis



# Analytic Methods

- Critical Thinking / Systems Analysis
  - Kent's First Strike Stability
- Statistical Analysis: fitting models to datasets
  - Difficulties: Coding data, model specification, descriptive statistics. Presupposes model format.
  - Huth, Signoriono
- Game Theory
  - Difficulties: presupposes an ability to compute utilities
  - Schelling, Zagare and Kilgour
- History
  - Difficulties: May not be applicable to future campaigns
  - Meersheimer, Keegan, others



# General Conclusions

- Deterrence requires all the levers of national power – it is not simply a military problem – (all methods)
- Deterrence is most likely to fail when:
  - At least one side perceives the campaign will be ‘quick’ and ‘easy’ (History, Strike Stability)
  - At least one side perceives the campaign feels that they are in a ‘use or lose’ situation (History, Game Theory)
  - Deterrence postures irrelevant if not effectively communicated (History, Statistics)
  - Communication Fails (History)
- The objective of deterrence cannot be ‘Everything – Everywhere’ – we should prioritize what we wish to deter.



# Who is deterrable?

## Deterrable

- Nations that seek to minimize costs
- Nations that feel secure in their nuclear (and other) deterrents

## Not deterrable

- Groups who do not seek to minimize costs
  - Because they don't count them
  - Because they have ideological imperatives to act
  - Because they seek conflict
- Nations who feel they are in a use / loose situation.





# Nuclear Deterrence: The Gold Standard?

- Kent's model of Nuclear Deterrence
- Advantages: tractable, simple, elegant
- Disadvantages: Measures the 'costs' of attacking first versus the 'costs' of attacking second
- The closer this ratio is to unity, the more stable the system is.

- Sources of Stability:
  - Clear Communications
  - Assured Retaliation
- Sources of Instability:
  - “Splendid First Strike”
  - Deterrence capability made irrelevant:
    - Communication lapses i.e. Saddam Hussein
  - “Mandates” – Political or personal motives that force a solution
    - Germany WWII?



# Kent's Model of deterrence

**First strike Stability Index:**

$$FSSI = \frac{C_{A,1}}{C_{A,2}} \bullet \frac{C_{B,1}}{C_{B,2}}$$

**Where: C represents costs; several definitions have been used**

**Ratios don't tell the whole story; magnitude of potential costs key as well.**



# True or False?

No nuclear armed nation has entered in to direct, force-on-force 'Shooting War' with another nuclear armed nation?



# False!

**1969 Sino-Soviet Conflict**

**1999 Kargil War (India / Pakistan)**



# How do Nations Measure Costs / Utility?

- (at least) Three metrics:
- Utility among the community of Nations:
  - Declaratory Statements (NPR, Treaties, etc)
  - Measurable, or at least predictable
- Domestic Utility:
  - Demographics, politics
  - Also measurable or at least predictable
- Utility to the ruling elites:
  - Difficult to measure
- For small groups or 'rogues' consequence is measured against the leaders, not the nation writ large.
- Data Sources: Huth (1988), EUgene, POLITY datasets.



# Case Study: Germany vs. Britain / France “Phony War”

## Allied Decision

- Britain and France believed that WWII would be a re-fight of WWI
- Diplomatic Considerations
- Assumed that their attack against Germany could begin after:
  - Setting up Defense
  - Applying Economic Pressure
  - Defeating Italy
- Did not Foresee Blitzkrieg!

## Germany’s Decision

- Hitler’s Generals: Opposed to attacking immediately (Military Considerations)
- Hitler: Attack immediately (Political / Diplomatic Considerations)
- Impasse through winter of 1939
- Adoption of Game-Changing capability (Blitzkrieg), and attack 1940!



# Deterrence: Prospects



# Status of United States' Deterrence Today:

- Strategic Forces: Largest and most combat-ready in the world
- Afghanistan Campaign:
  - 9/11 attack to Taking of Kabul: 92 days
- Iraq Campaign:
  - From beginning to Baghdad: 41 Days
- But...



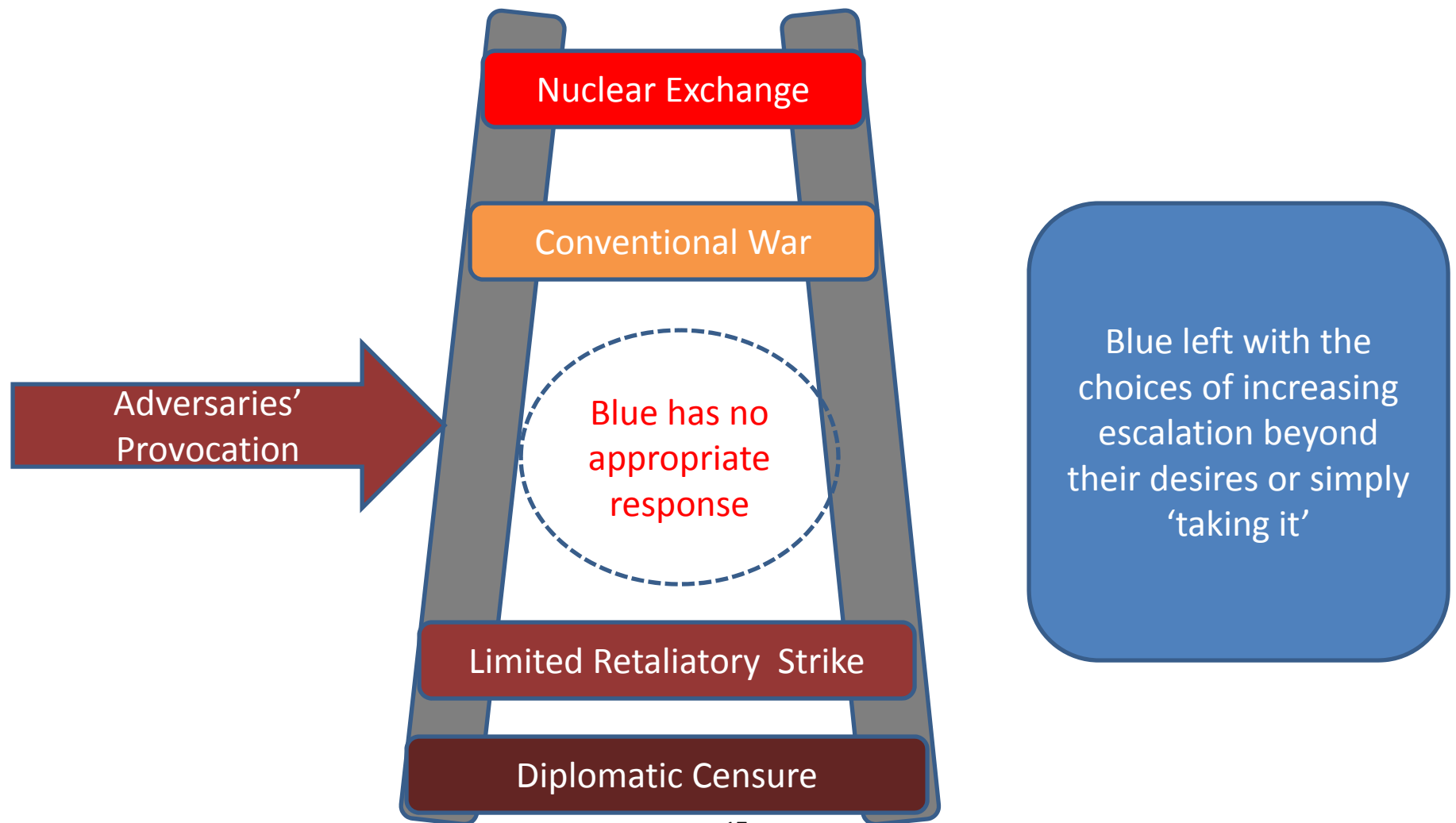


# Deterrence: Other Domains

- Nuclear Terrorists
- Cyber



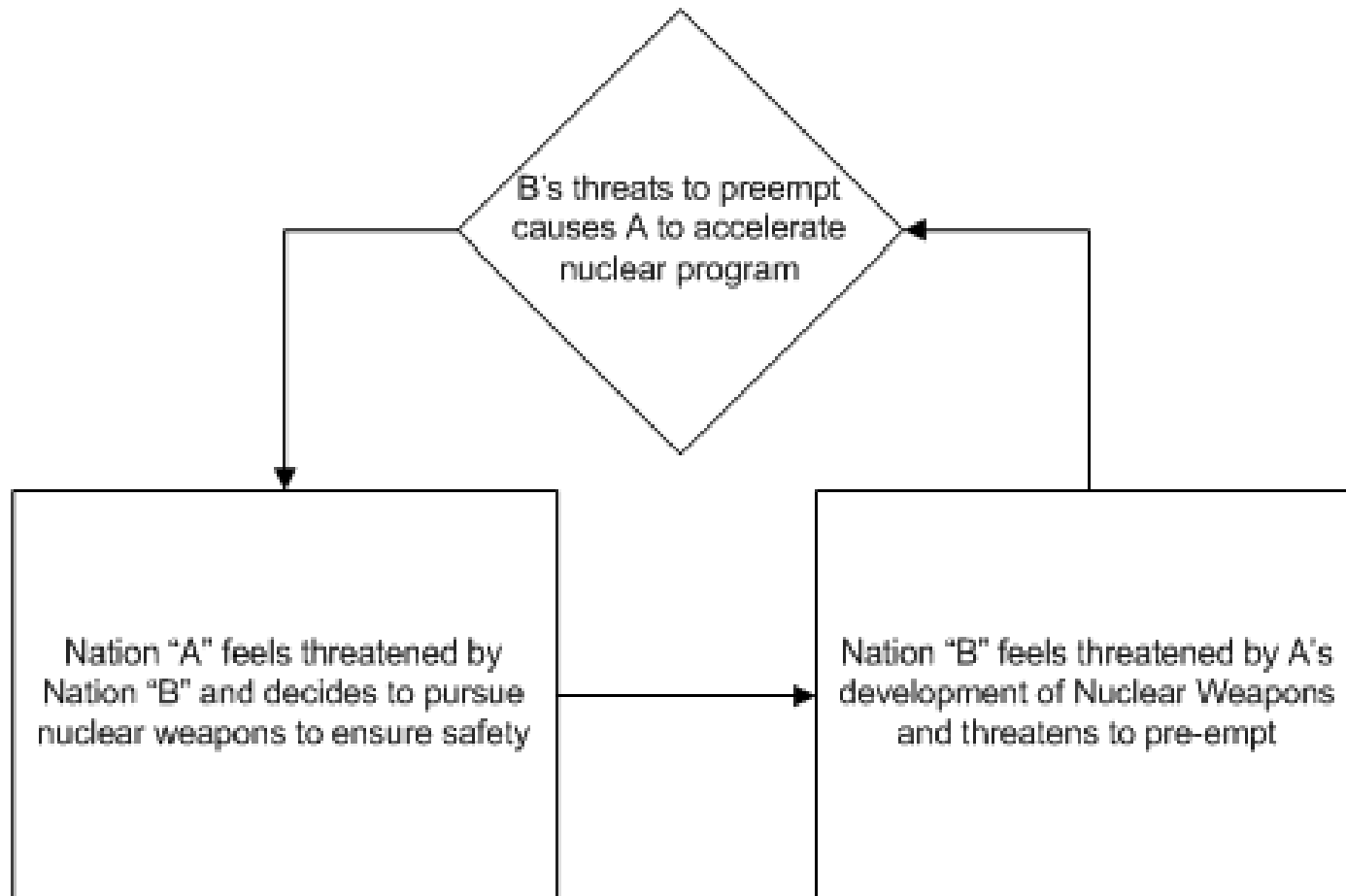
# Missing Rungs on the “ladder of Escalation





# A Paradox (from First Strike Stability\_)

- “Proliferation – Escalation” Paradox:





Fin.